

ABSTRACT

Apparatus and methods facilitating a distributed approach to performance and functionality testing of location-sensitive wireless data communication systems and equipment are described. A plurality of test units, geographically distributed at arbitrary points in a three-dimensional volume surround the system or equipment under test. Each test unit generates test stimuli and records responses from the device under test, and emulates the effects of changes in spatial location within an actual wireless network environment. A central controller co-ordinates the set of test units to ensure that they act as a logical whole, and enables testing to be performed in a repeatable manner in spite of the variations introduced by the location sensitive characteristics of wireless data communication networks. The central controller also maintains a user interface that provides a unified view of the complete test system, and a unified view of the behaviour of the system or equipment under test. For diagnostic purposes, the recorded responses may be regenerated to view any defects as many times as necessary to correct them. Alternatively, each test unit may have either wired network interface units, instead of a wireless interface unit to test systems or equipment forming part of a wired network portion in the wireless data communication system.